Amendments to the claims:

Claims 1-19 (Cancelled).

20. (Original) A displacement sensor having a configuration in which an output changes corresponding to a change in the relative position to an object to be detected and which detects a proximity position in relation to said object to be detected based on the change in said output wherein:

magnetizing coils and detecting coils are wound around a core body such that they are lined on the axis of said core body;

one end of each of said magnetizing coils and said detecting coils are placed at a core center portion at the approximate center of said core body in the axial direction while the other ends of magnetizing coils and detecting coils are placed at a pair of core end portions at each end of said core body in the axial direction; and

the axial direction of said core body is arranged to be approximately equal to the direction of a change in the relative position in relation to said object to be detected such that one of said core end portions and said object to be detected face each other when said object to be detected approaches and retreats from said core end portion.

21. (Original) A displacement sensor according to Claim 20, wherein said core body is formed of a piece of a plate.

22. (Original) A displacement sensor according to Claim 20, wherein the width of said core end portion in the direction perpendicular to the axial direction is smaller than the width of said core center portion.

23. (Original) A displacement sensor according to Claim 20, wherein said magnetizing coils have a pair of wound portions which are positioned such that opposed magnetic fields are generated on said axis of said core body.

Claims 24-27 (Cancelled).